

MBNMS Research Activity Panel Meeting Summary

Host: Elkhorn Slough National Estuarine Research Reserve (ESNERR)

Date: Friday, May 13th, 2005

In Attendance:

Members:

- Chris Harrold (Chair), Monterey Bay Aquarium
- Andrew DeVogelaere (RAP Coordinator), Monterey Bay NMS
- Churchill Grimes, NOAA/National Marine Fisheries Service
- Steve Moore (Vice-Chair), California State University, Monterey Bay
- Mark Carr, University of California, Santa Cruz
- Francisco Chavez, Monterey Bay Aquarium Research Institute
- Robin Tokmakian, Naval Postgraduate School
- Kerstin Wasson, Elkhorn Slough NERR
- Eric Van Dyke, Elkhorn Slough NERR
- Geoff Wheat, National Undersea Research Program
- Jim Harvey (At-Large), Moss Landing Marine Labs
- Caroline Pomeroy (At-Large), University of California, Santa Cruz
- Ellen Faurot-Daniels (At-Large), California Coastal Commission
- Gary Sharp (Special Advisor), Center for Climate/Ocean Resources Study

Guests:

- Becky Stamski, MBNMS
- Katie Siegler, former MBNMS
- Steve Lonhart, MBNMS
- Toby Garfield, SFSU
- Becky Christensen, ESNERR

UPDATES

Mark Carr (UCSC) is a member of the Marine Life Protection Act (MLPA) Science Advisory Team, which will be reviewing existing MPAs from Pigeon Point to Point Conception to determine if these areas are currently meeting their designated objectives. Mark will be touching base with RAP members that may be able to contribute to this evaluation. In addition, the next working group meeting in the MLPA process is on June 8th and 9th in Monterey; these meetings are open to the public and Mark encouraged RAP members to participate.

Kerstin Wasson (ESNERR) updated the RAP on the Elkhorn Slough Tidal Wetland Plan (<http://www.elkhornslough.org/tidalwetlandplan.htm>). The Science Panel has developed predictions of what the slough would look like in 50 years with existing management. The Strategic Planning Team reviewed this forecast and decided that management changes need to be implemented to increase salt marsh area and to mitigate erosion problems. The group is

exploring large and small-scale alternatives to accomplish its goals. Kerstin asked RAP members to provide her with any ideas or contacts for developing these alternatives.

PRESENTATIONS

Update on the Center for Integrated Marine Technology (CIMT) (Don Croll, UCSC)

CIMT is an offshore ocean observation system aimed at understanding the California upwelling ecosystem. The program was started in 1995 to study blue whale foraging and eventually adopted the slogan, “Wind to Whales.” Their main goals have widened to include monitoring physical and biological processes over the long term to distinguish between human and natural induced change, while providing fast and efficient access to this data. They are seeking to archive and integrate new and old data sets across networks and programs.

CIMT uses data from several sources, including: ship-based data, shore-based data, moorings, satellite data, focal studies and modeling. In addition to the common physical and biological parameters measured by ocean observatories, CIMT will also focus on monitoring higher trophic level organisms. The ship-based data includes 2-day monthly surveys aboard the *R/V John H. Martin* to measure a variety of parameters. Don encouraged RAP members to contact him if they would like to go out on a cruise. An example of results from these cruises shows the relationship between krill density and whale abundance in the Monterey Canyon. In addition, harmful algal blooms, previously documented close to shore, were found offshore during these cruises in almost every month of the year.

Shore-based data includes surface currents to create models that will allow managers to track oil spills and other surface processes. Moorings measure a variety of parameters, including physical oceanographic data, micronutrients, phytoplankton and sound. CIMT is involved in putting a new mooring (called M0) on the north side of the canyon inshore from the MBARI M1 mooring. Satellite data, providing information on sea surface temperature, chlorophyll, primary production and sea surface winds, is anticipated to be available via download. With this vast data set, CIMT is hoping to create predictive models. Finally, a live access server (through NOAA) will be used to allow users to visualize and download data.

For more information, see: <http://cimt.ucsc.edu/research.html>.

Don also noted that Susan Smith of NMFS in La Jolla is pulling together information to compile a biomass assessment of krill for the PFMC management plan. There will be a workshop in June and Don encouraged RAP members to attend if they work in this field.

Update on the NMS West Coast Observation System (Steve Lonhart, MBNMS)

The West Coast Observation System (“West Coast Obs”) is funded by the National Marine Sanctuaries Program (NMSP) to establish an immediate and active presence for the NMSP within the structure of IOOS proposed for the west coast. There are three main components: 1) in situ observations, 2) information and product delivery, and 3) technology development.

Each of these components has short and long term targets; thus far, data management has been the most challenging task. West Coast Obs includes the five west coast sanctuaries.

Steve focused on in-situ observations, indicating that West Coast Obs relies on PISCO (<http://www.piscoweb.org/>) to design, construct, deploy and maintain a series of instrumented moorings called Sanctuary Ecological Assessment (SEA) Stations. The objective of this system is to monitor the physical processes driving recruitment of priority biological resources.

Placement of the moorings will be based on the needs of the sanctuaries, with a secondary aim of “densifying” the PISCO network. Twenty-three new stations have gone in or are planned to be put in place; eleven of these will be in the MBNMS. These moorings will be almost exclusively within SCUBA diving depths and will be coupled with existing PISCO monitoring sites as much as possible, allowing the data to be used in a larger biological context. Currently, thermistors are the most common instrument on the moorings, but more instruments (including ADCPs, fluorometers, current meters, and CTs will/can be added). It was noted that salinity would be another good parameter to measure.

A second goal of West Coast Obs is to promote data discovery through the SIMoN website. In addition to providing links to the main ocean observation programs in the region, SIMoN staff members are developing a metadata management tool in collaboration with CeNCOOS. This is intended to facilitate management of CeNCOOS by regional coordinators. SIMoN and PISCO staff members are also working with the National Coastal Data Development Center (NCDDC), also part of NOAA, to develop a database structure that will manage the mooring data from West Coast Obs. See http://www.mbnms-simon.org/sections/obs/data_links.php for more information.

Update on the Center for Integrative Coastal Observation, Research and Education (CI-CORE) (Toby Garfield, SFSU)

The CI-CORE program was established in 2002 between eight coastal California State University campuses and is funded as a congressional ear mark through the NOAA Coastal Services Center. CI-CORE hopes to become an integral part of CeNCOOS and IOOS by providing nationally relevant solutions to challenges facing our coastal marine and estuarine environments. The main focus of CI-CORE is the coastal and nearshore zone, inshore from the 100-m isobath.

The main data collection mechanisms of CI-CORE are: shore-based in situ water quality sensors with high temporal resolution; hyperspectral remote sensing technology, in collaboration with the Florida Environmental Research Institute in Tampa; and multibeam sidescan sonar imaging. Using shore-based water quality sensors allows CI-CORE to provide near real-time data on their websites. Toby noted that these websites, which are run by the individual universities, will be standardized soon.

Some examples of data coming out of CI-CORE include: geomorphic changes to the inner Monterey Canyon; mapping biological resources such as squid masses; high resolution bathymetry of the San Francisco Bay entrance channel; wetland delineation; and time series kelp mapping. CI-CORE's next push will be data dissemination. See <http://cicore.mlml.calstate.edu/> for more information; click on the "Partners" link to view data and information from other universities.

Update on the Coastal Ocean Currents Monitoring Program (COCMP) (Toby Garfield, SFSU)

Toby outlined a unique program of Surface Current Mapping (SCM) called the COCMP, funded by California state initiatives to monitor surface circulation. This is a new, collaborative effort that may also eventually become part of CeNCOOS.

The objectives of COCMP are to build a nested array of SCM instruments, also known as HF radar, along the entire California coast to improve the resolution of coastal surf and wave estimates and for estimating longshore and rip currents. The design criteria for the array includes: existing SCM systems to build upon, population distribution, permitted wastewater ocean discharges, oil spill probability, and sensitive habitats. A set of antennas with a range of ~130 km offshore and a spatial resolution of 6 km will be used along the entire coast. A nested array with higher resolution (3 km spatial resolution with 40 km range offshore) will be placed in target areas of concern.

Hourly averaged data will be supplied by this array, in raw form or as maps of hourly sea surface currents. All data will be routed through the Scripps ROADNET (<http://raodnet.ucsd.edu>) for distribution and product development. For more information, see <http://www.cocmp.org>.

Update on the Central California Ocean Observing System (CeNCOOS) (Francisco Chavez, MBARI)

The US Integrated Ocean Observing System (IOOS), coordinated by an advisory group called Ocean.US (www.ocean.us), has 7 major objectives for study: climate variability, marine operations, national security, resource management, health of the oceans, natural hazards, and public health. There are two IOOS components: global/basin scale and coastal. The coastal component includes national-level projects and regional associations, the latter of which are focused on land-based inputs, state and regional priorities, greater spatial and temporal resolution, and more variables. CeNCOOS is one of these regional associations. This entire system is still an experimental work in progress; significant funding for this network is expected for 2007.

The CeNCOOS initial partners include a wide array of interest groups, including private companies and many of the ongoing ocean observing efforts (e.g., CICORE, CIMT, PISCO). Currently, CeNCOOS is identifying data gaps and areas of potential overlap. Steve Lonhart

(MBNMS) is on the CeNCOOS End-User Committee; he has outlined the products that the MBNMS would like to receive from CeNCOOS at these committee meetings.

There is still a need to develop a constituency for CeNCOOS and RAP members agreed that this may be an issue for the SAC to address. Chris Harrold will provide the SAC with an overview of the capabilities of CeNCOOS, as it relates to MBNMS needs and issues. It was also suggested that a way to get a more robust constituency behind CeNCOOS would be to translate scientific findings into more user-friendly languages for a variety of user groups (e.g., fishermen, surfers, resource managers).

Francisco also mentioned an NSF-funded Ocean Instrumentation (OI) program, which is distinct from IOOS. The three main components of OI are:

- Global: 10-20 moorings around the ocean and maintained over a long-term
- Regional: cabled array of sensors (e.g., Neptune array in the Juan de Fuca region, or the new Mars node in Monterey Bay)
- Coastal: a combination of moorings, radar arrays (e.g., COCMP), and gliders (e.g., ORION proposal submitted by Dever, Chavez, Send *et al.*)

Past, Current, and Future Agenda Items

- Status of research permits in the MBNMS
 - Benthic trawling impacts MBNMS action plan
 - Update from John Stephens, Adjunct Professor at Cal Poly, on his southern MBNMS (Cambria) studies
 - ~~Status of the Ocean Observatory system~~
 - ~~Implementation of the new RAP Purpose and Protocols~~
 - ~~Marine reserves and MLPA update.~~
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